

26TH ANNUAL



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How is Choosing By Advantages (CBA) more than the Tabular Method?

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SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

October 23, 2024

Raise your hand (and keep it up) if....

- You have heard of Choosing By Advantages (CBA)?
- You have used CBA a little?
- You have used CBA a lot?
- You use CBA daily?



Dustin's CBA Background

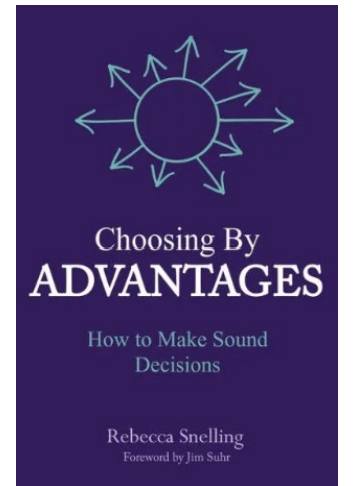
- 2002
 - Jim Suhr guest lectures several classes at Utah State University
- 2004-2020:
 - Studied Jim Suhr's four books.
 - Taught coworkers CBA language and removed disadvantage and pro/con language from team deliverables.
- 2020 – Current:
 - Formal teaching CBA to coworkers
 - Implemented formal CBA on projects
 - Ongoing coaching/guidance by Jim Suhr and Rebecca Snelling



2024 – Led multi-week class on “Choosing By Advantages: How to Make Sound Decisions”

Rebecca's CBA Background

- 2010 - 2011
 - 3 separate 3-day training classes with Jim and Margaret Suhr
- 2010 – 2012: Taught 1-day trainings + large decision facilitation
- 2013 – Current:
 - Continued experimentation with training models
 - Teaching CBA to Design, Construction and Engineering firms, School Districts, Health Insurance Companies,
 - Teaching others to teach CBA
 - Ongoing coaching/guidance by Jim Suhr



2022 – Wrote “Choosing By Advantages: How to Make Sound Decisions”

Problem Statement

The Principles and Phases of CBA are inconsistently implemented, and the Tabular Method is frequently mistaken for the whole system of CBA.

Current Condition – What we are Seeing



but

Problem Statement

The Principles and Phases of CBA are inconsistently implemented, and the Tabular Method is frequently mistaken for the whole system of CBA.

How is CBA More than Tabular Method? The Full Definition



What is Choosing By Advantages (CBA)?

*“Choosing by Advantages is a **decisionmaking system** for **sound decisionmaking**. The CBA system includes **definitions**, **principles** and **methods** for practically **all types of decisions**. The principles are central. The definitions help explain the principles. The methods apply them.*

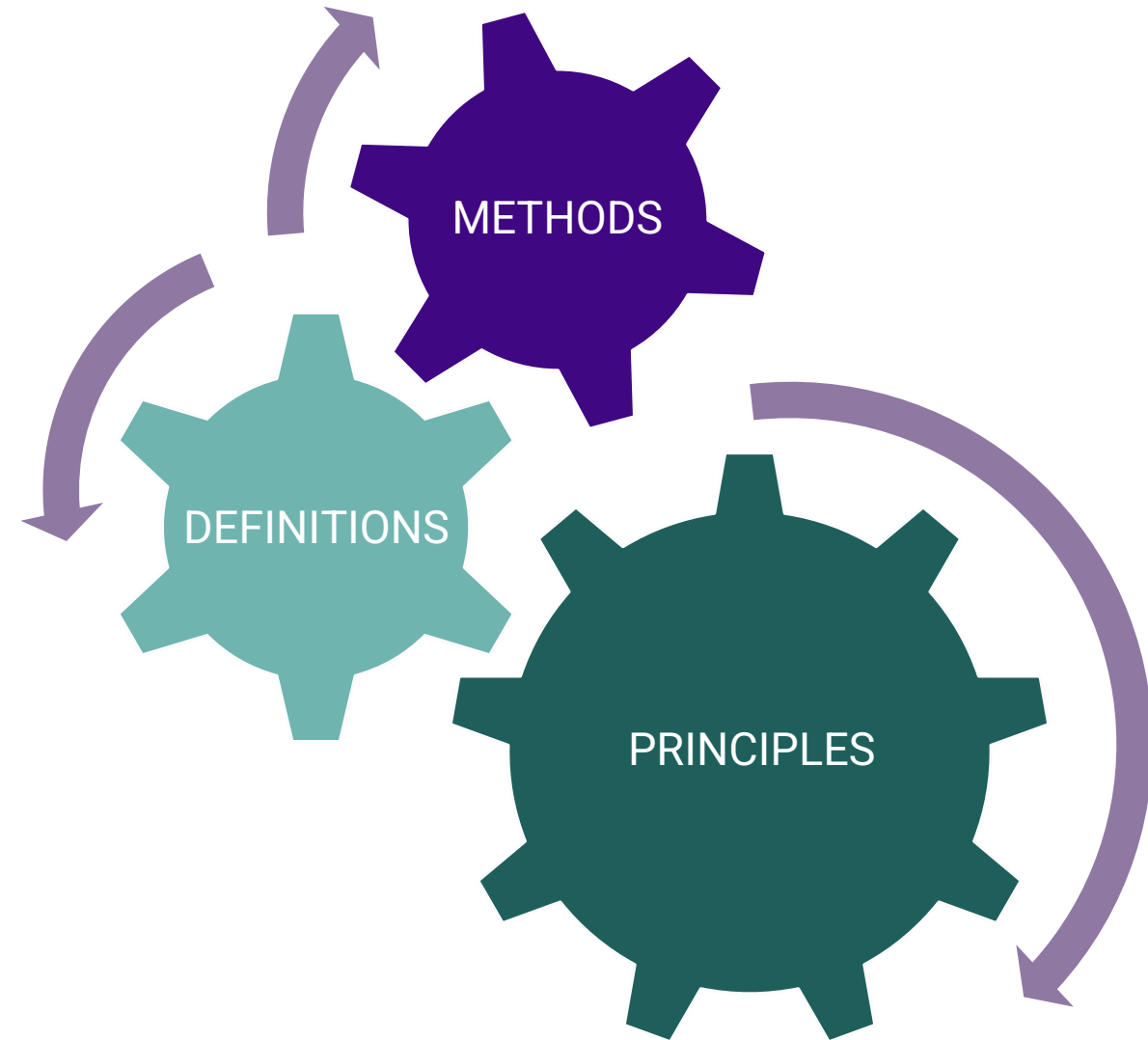
Sound decisionmaking is the foundation of the CBA System.”

- Jim Suhr



What is a System?

A group of related things that work together as a coherent whole.



How is CBA More than Tabular Method? Vocabulary

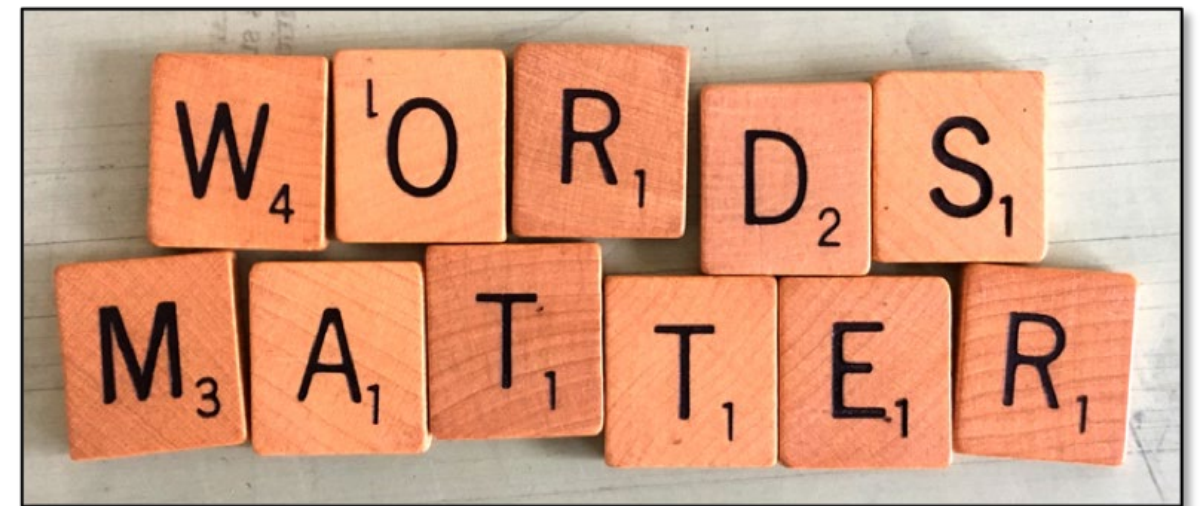


Vocabulary

The words in CBA vocabulary represent the concepts that often make the difference between sound and unsound decisions.

These are not new words. They are included in dictionaries and commonly used.

Within CBA, they are consistently used, using their correct definitions.



CBA Vocabulary

Alternative:

People, things, or plans from which one is to be chosen are called *alternatives*. They are also called *options*. (In careful usage, they are never called *choices*).

Attribute:

A characteristic, quality, or consequence of one alternative (one person, one thing, or one plan) is called an attribute. (The key word is one.)

Factor:

Elements, or parts, of a decision. Factors contain data that are required for making a decision.

Criterion:

A standard, rule, or test on which a judgment or decision can be based is called a criterion. A criterion is a decision that guides further decision making.

Advantage:

An advantage is a benefit, gain, betterment, or improvement. It is a difference between the attributes of two alternatives. (The key is two).

How is CBA More than Tabular Method?

Four Cornerstone Principles



Cornerstone Principles of Sound Decisionmaking

Pivotal Principle: Decisionmakers must learn and skillfully use sound methods.

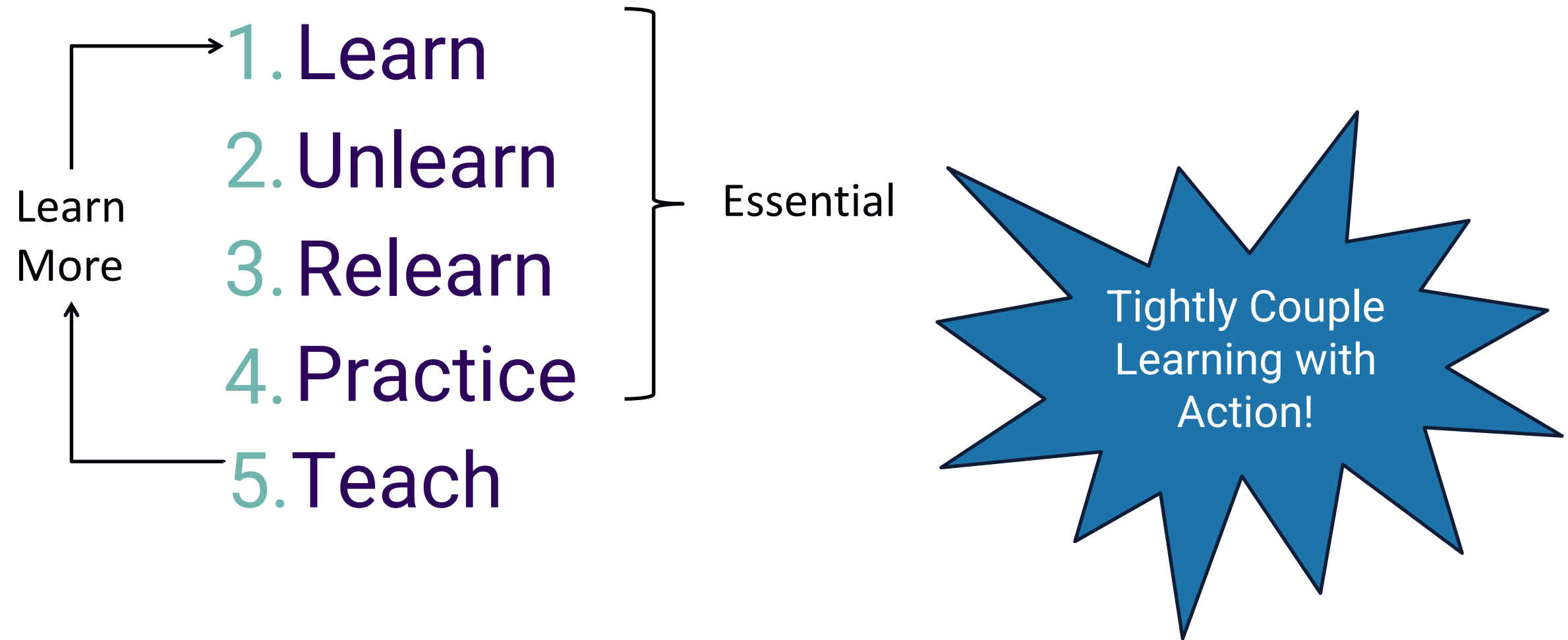
Sound decisionmaking is a learned skill

<u>Naturally Acquired</u>	
Crawling and walking	
Hand-Eye Coordination	
Eating	
Instinctive decisionmaking skills	

Sound decisionmaking is a learned skill

<u>Naturally Acquired</u>	<u>Learned</u>
Crawling and walking	Piloting an airplane
Hand-Eye Coordination	Reading and Writing
Eating	Math
Instinctive decisionmaking skills	Sound decisionmaking skills

CBA Learning Process



Cornerstone Principles of Sound Decisionmaking

Pivotal Principle: Decisionmakers must learn and skillfully use sound methods.

Fundamental Rule of Sound Decisionmaking: Decisions must be based on the importance of advantages.

Fundamental Rule Early Version

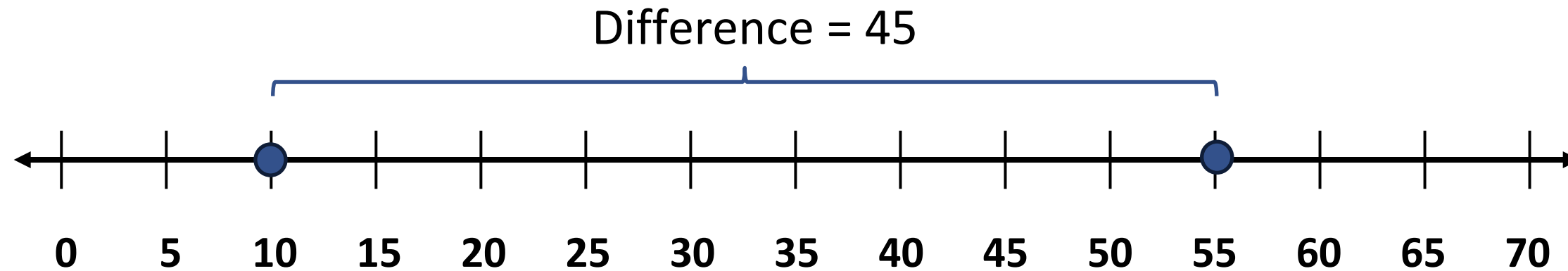
Only differences among
alternatives are relevant to
their comparison.

Eugene Grant, *Principles of Engineering Economy*

FIND 5 DIFFERENCES



Types of Differences



Beneficial Difference = Advantage

Detrimental Difference = Disadvantage

Cornerstone Principles of Sound Decisionmaking

Pivotal Principle: Decisionmakers must learn and skillfully use sound methods.

Fundamental Rule of Sound Decisionmaking: Decisions must be based on the importance of advantages.

Anchoring Principle: Decisions must be anchored to the relevant facts.

Which is Heavier?



OR



Which is Heavier?

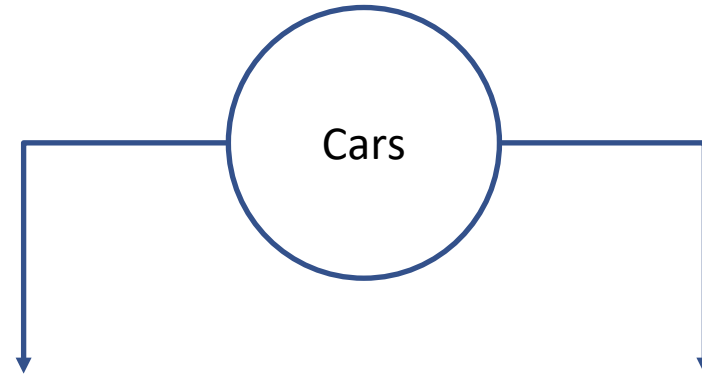


OR

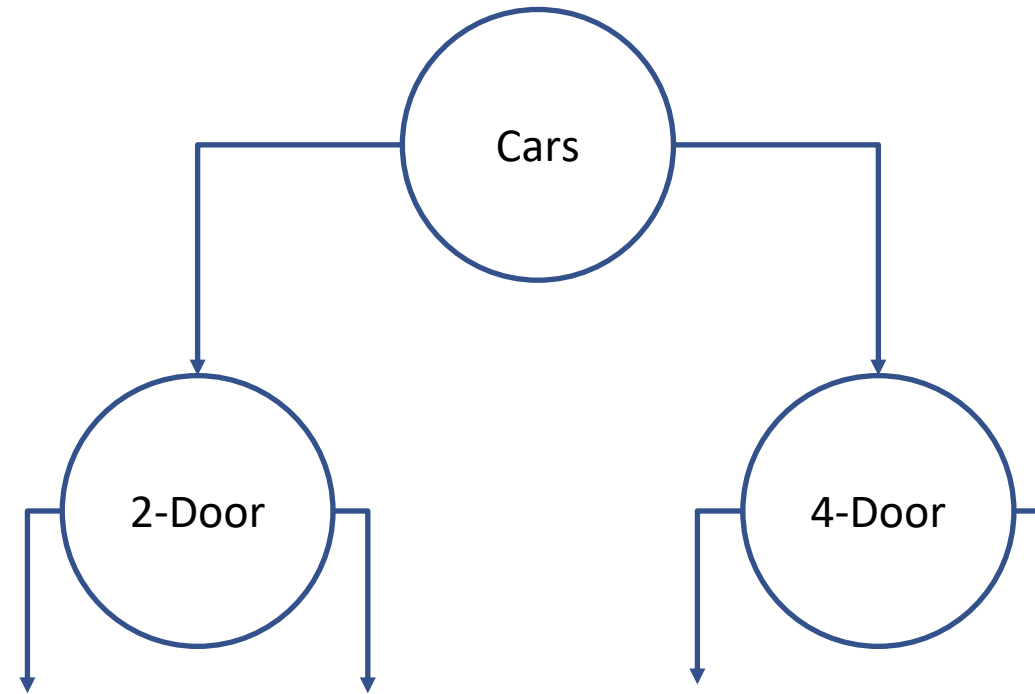


It's an unanswerable question

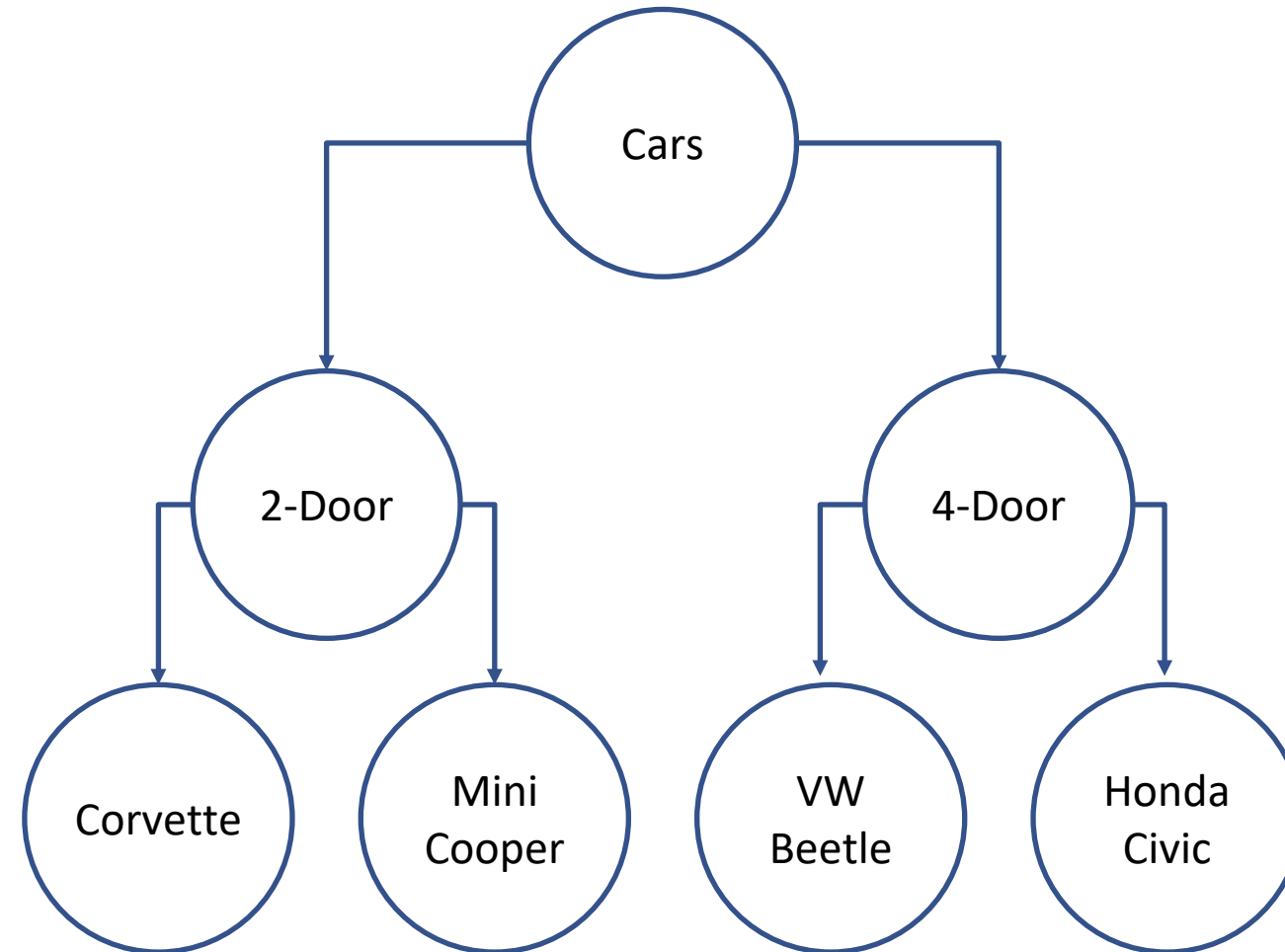
Specifying and Generalizing



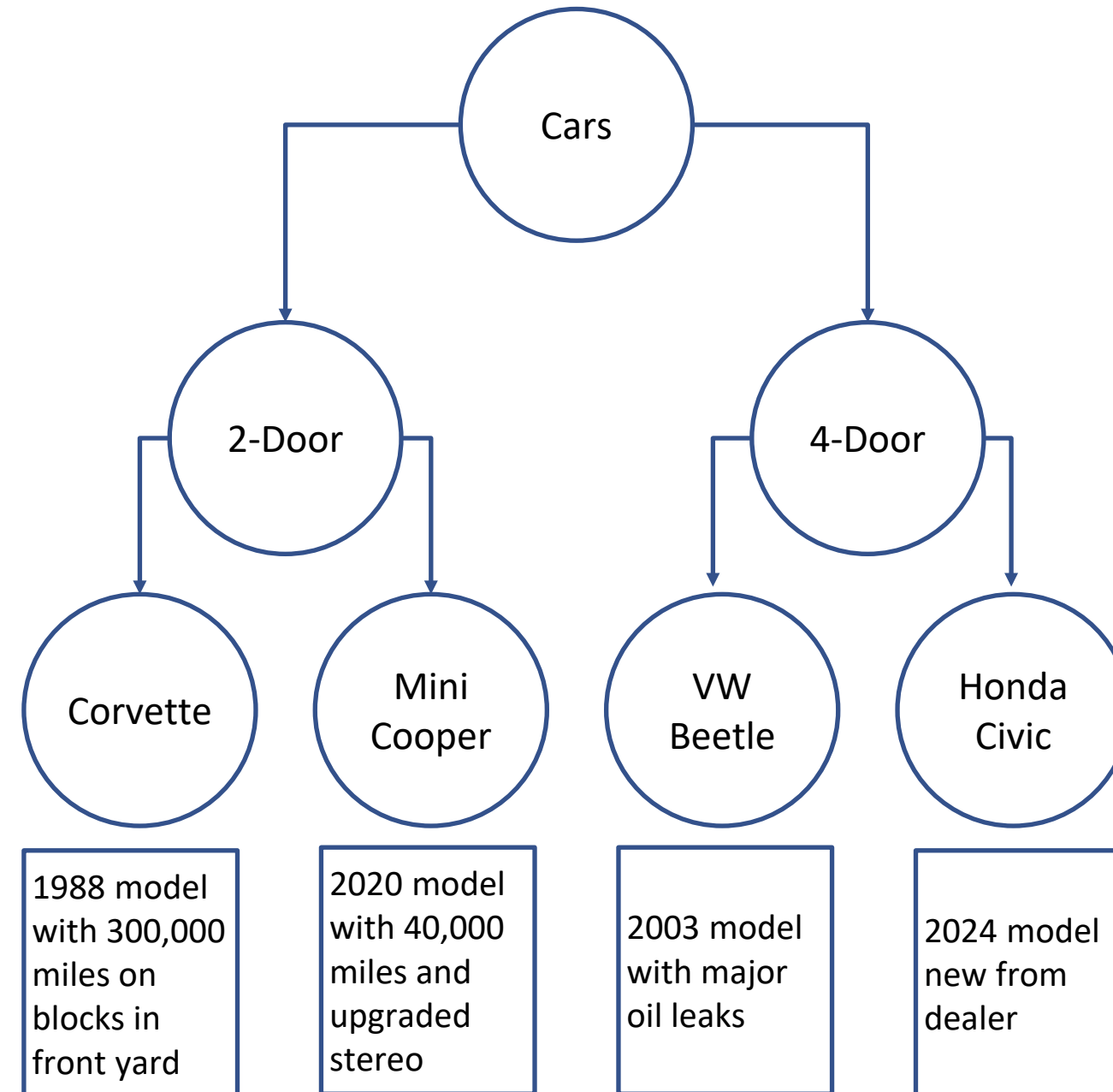
Specifying and Generalizing



Specifying and Generalizing



Specifying and Generalizing



Cornerstone Principles of Sound Decisionmaking

Pivotal Principle: Decisionmakers must learn and skillfully use sound methods.

Fundamental Rule of Sound Decisionmaking: Decisions must be based on the importance of advantages.

Anchoring Principle: Decisions must be anchored to the relevant facts.

Methods Principle: Different types of decisions call for different sound methods of decisionmaking

Common CBA Methods

Very Simple

Recognition-Response Process
Other very simple methods

Simple

Instant CBA
The Simplified Two-List Method
The Two-List Method

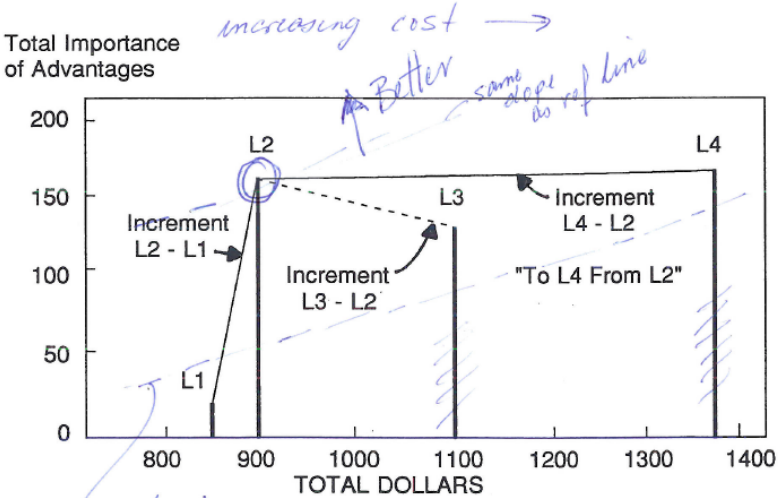
Complex

Tabular Methods
Money Methods
Special Methods


Tabular and Tabular with Money


CBA TOPIC: Structure & Grading Options		ALTERNATIVES			
FACTORS		A - SLAB ON GRADE	B - STEM WALL	C - CRAWL SPACE	D - PARTIAL BASEMENT
Does the alternative require fill	Attributes				200 yard of fill 700 yards cut = 475 yards (surplus)
Less dirt moved is better	Advantage	5,600 yard required	2,000 yards required	neutral	3,100 yards less
Existing Pond and storm inlets	Attributes	Fill across most of pond	Existing pond remains	Existing pond remains	Existing pond remains
Existing Pond to remain in preferred	Advantage		with existing pond vs w/o	with existing pond vs w/o	with existing pond vs w/o
Solution required life safety egress (Stair construction)	Attributes	No stair required	Stair required	Stair required	Stair required
No additional construction preferred	Advantage	No stairs vs with stairs			
Courtyard will be built with walls	Attributes	No walls	Wall	Wall	Wall
No wall is preferred	Advantage	Without wall vs with wall			
Structural solution has the least construction time site and building	Attributes	no additional time	(4 wks) longer time	(3 wks) long time	(6 wks) longest time
Less Total Construction time is preferred	Advantage	least amount of time	2 weeks earlier	3 weeks earlier	
Solution provides storage space	Attributes	Provides no storage space	Provides no additional storage space	Provides no additional storage space	Provides approximately 4500 sf of storage
Storage space is preferred	Advantage				4500 sq more storage
Construction type changes	Attributes	no change required	no change required	no change required	change from type 2b to type 2a
No change is preferred	Advantage	no change vs with change	no change vs with change	no change vs with change	
Structural options available	Attributes	no options	no options	2+ options	2+ options
More options are better	Advantage			2 more options	2 more options
Design and Construction Complexity	Attributes	basic	stem wall w stairs	elevated slab w stairs	basement w stairs, hvac
Less complexity is better	Advantage	least complex	less complex	less complex	
Total Importance:			269	179	199
Total Cost:		\$0,000.00	\$163,000.00	\$234,000.00	\$258,000.00

FACTORS	LANDSCAPING ALTERNATIVES			
	L1	L2	L3	L4
ATTRACTIVENESS Attributes:	Fair	+ Excellent	Very Good	Excellent
Advantages:		+ Much More Attractive	More Attractive	Much More Attractive
MAINTENANCE Attributes:	Very Easy	Very Easy	Easy	+ Easy
Advantages:	Easier to Maintain	Easier to Maintain		Slightly Easier
PRIVACY Attributes:	Little Privacy	Average Privacy	+ Average Privacy	Very Private
Advantages:		More Privacy	+ More Privacy	Much More Privacy
TOTAL IMPORTANCE:	20	110	125	170
TOTAL DOLLARS:	\$850	\$900	\$1,100	\$1,375



Simplified Two-List and Two-List

What Park to Visit	
ADVANTAGES OF ST. MARY'S GLACIER	ADVANTAGES OF CHATFIELD STATE PARK
	<ul style="list-style-type: none">• 45 minutes closer• 29 degrees warmer 

Advantages of St. Mary's Glacier		Advantages of Chatfield State Park	
<ul style="list-style-type: none">• With a Glacier vs. Without 	10	<ul style="list-style-type: none">• 45 minutes closer• 29 degrees warmer	1 5
Total Importance:		Total Importance:	

Recognition Response and Instant CBA



Cornerstone Principles of Sound Decisionmaking

Pivotal Principle: Decisionmakers must learn and skillfully use sound methods.

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How is CBA More than Tabular Method?

Five Phases



The Five Phases



THE STAGE-SETTING
PHASE



THE INNOVATION
PHASE



THE
DECISIONMAKING
PHASE
(MENTALLY
CHOOSING)



THE
RECONSIDERATION
PHASE
(EMOTIONALLY
CHOOSING)



THE
IMPLEMENTATION
PHASE (PHYSICALLY
CHOOSING)

The Stage Setting Phase

Bring Stakeholders together:

- Why are we making this decision?
- Articulate the circumstance and context.
- Define the problem the decision will solve.
- Articulate the value the decision will achieve.
- Teach basic CBA vocabulary
- Create clear criteria – both “Must” and “Want”
- Identify Roles



The Innovation Phase

Identify

a list of alternatives, identify more!

Determine

the relevant attributes of the alternatives that reveal differences amongst them. Particularly in relation to the criteria.

Select

the alternatives that will make it into the decision.

Identify & Document

any regulations, assumptions, exclusions, data, and anything else useful to make the information transparent to those involved in the decision.





The Decisionmaking Phase (Mentally Choosing)

Very Simple

Recognition-Response Process
Other very simple methods

Simple

Instant CBA
The Simplified Two-List Method
The Two-List Method

Complex

Tabular Methods
Money Methods
Special Methods

The Reconsideration Phase (Emotionally Choosing)



- Does the result pass the “gut” check? If not, why not?
- Are there additional alternatives that should have been considered?
- Are there additional advantages that should have been included?
- Are there other changes needed?
- Make a strong commitment to the decision

The Implementation Phase (Physically Choosing)

5

Articulate the results you expect and implement the decision.

Evaluate the results from your decision implementation, make improvements if relevant.

Carry lessons forward.



The Five Phases



THE STAGE-SETTING
PHASE



THE INNOVATION
PHASE



THE
DECISIONMAKING
PHASE
(MENTALLY
CHOOSING)



THE
RECONSIDERATION
PHASE
(EMOTIONALLY
CHOOSING)



THE
IMPLEMENTATION
PHASE (PHYSICALLY
CHOOSING)

What Phases do You often see Missed?



THE STAGE-SETTING
PHASE



What Phases do You often see Missed?



THE STAGE-SETTING
PHASE



THE INNOVATION
PHASE



What Phases do You often see Missed?



THE STAGE-SETTING
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THE INNOVATION
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THE
DECISIONMAKING
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What Phases do You often see Missed?



THE STAGE-SETTING
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What Phases do You often see Missed?



THE STAGE-SETTING
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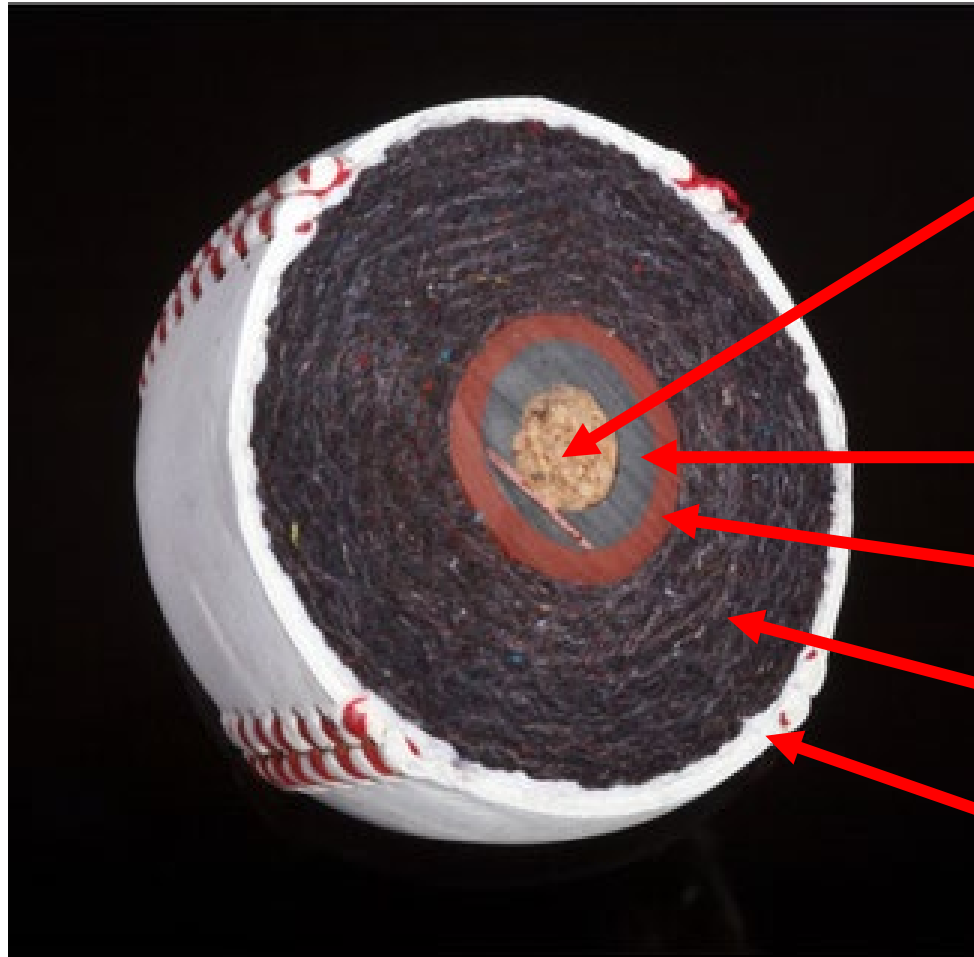
How is CBA More than Tabular Method? Remember the Problem Statement?



Problem Statement

The Principles and Phases of CBA are inconsistently implemented, and the Tabular Method is frequently mistaken for the whole system of CBA.

The CBA System



- Decisions must be based on the importance of Advantages
- Remaining Principles
- Vocabulary
- Phases
- Methods

Countermeasures

1. Use the Vocabulary Correctly
2. Follow the Cornerstone Principles
3. Use the Phases

How can you apply this tomorrow?

- Practice and use the vocabulary correctly
- Study and revisit the principles
- Create your own agenda for a Phase One meeting
- Ensure utilization of all 5 Phases

In Conclusion...

Using the Choosing By Advantages System fully and correctly is necessary for sound decisionmaking.



Contact Us

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In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.



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Thank you for attending this presentation. Enjoy the rest of the 26th Annual LCI Congress!